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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/612,553

07/01/2003

Jim Neeb

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3621

7590

08/12/2004

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EXAMINER

TANG, MINH NHUT

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,553

Applicant(s)

NEEB, JIM

Examiner

Minh N. Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claims 14, 16, 19 and 20 are objected to because of the following informalities:

a/ in claim 14, there is insufficient antecedent basis for the limitation "the device under test" (line 2). For examination purposes, "the device under test" is interpreted as -- a device under test --.

b/ in claim 16, it appears that claims 16 and 15 are duplicated recitation (i.e., the force retainer is already mounted on the interface unit). Applicant is advised that should claim 15 be found allowable, claim 16 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

c/ in claims 19 and 20, the dependency of these claims is improper since claims 19 and 20 are method claims whereas claim 10 in which claims 19 and 20 depend thereon is a device claim. For examination purposes, claims 19 and 20 are treated as dependent on claim 15. Furthermore, there is insufficient antecedent basis for the

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limitation "the force locator" (claim 20, line 2). For examination purposes, "the force locator" is interpreted as -- a force locator --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 6-12, and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kister (U.S.P. 6,064,215).

As to claim 1, Kister disclose, in Fig. 9, a system for testing semiconductor devices (50), comprising: a force retainer (48) mounted on a material handler (i.e., mounted to external machinery at lip 53); and a force locator (49) interposed between the force retainer (48) and a circuit board (36) and, together with the force retainer (48), adapted to prevent the circuit board (36) from bending (see column 4, lines 61-67, and column 5, lines 17-19).

As to claim 2, Kister discloses in Fig. 10, the force retainer (48) comprises: outer and inner rings (see Fig. 10); and a plurality of ribs (i.e., parts between holes/openings 62) connecting the outer ring to the inner ring.

As to claim 3, Kister discloses in Fig. 9, the system comprises a test head (Test Electronics) including a plurality of connectors (45); where the force retainer (48) comprises a plurality of openings (62) between adjacent ribs (i.e., parts between

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openings 62, see Fig. 10); and where the plurality of connectors (45) protrude through the plurality of openings (62).

As to claim 4, Kister discloses in column 4, lines 34-35, the force retainer (48) is steel.

As to claim 6, Kister discloses in Fig. 9, the force locator (49) is mounted on the circuit board (36).

As to claim 7, Kister discloses in Fig. 9, the force locator (49) has a same shape as a probe head (38).

As to claim 8, Kister discloses in Fig. 9, the force locator (49) is adjustable to accommodate spacing limitations between the circuit board (36) and the force retainer (48).

As to claim 9, Kister discloses, in Fig. 9, a tester, comprising: a top plate (not shown) on a material handler (i.e., external machinery); and a force retainer (48) fixedly mounted on the top plate (i.e., mounted to external machinery at lip 53), the force retainer (48) including an outer ring connected to an inner ring (see Fig. 10) by a plurality of ribs (i.e., parts between holes/openings 62).

As to claim 10, Kister discloses in Fig. 9, an interface unit (36, 38, 49) removably mounted on the force retainer (48) and including a force locator (49), the force locator (49) being fixedly mounted on a circuit board (36).

As to claim 11, Kister discloses in Fig. 9, the interface unit (36, 38, 49) comprises a probe head (38) attached to the circuit board (36) on one side (i.e., upper side) and having contact pins (34) protruding from another side (i.e., lower side).

As to claim 12, Kister discloses in Fig. 9, the force locator (49) is a same shape as the probe head (38).

As to claim 14, Kister discloses in Fig. 9, a test head (Test Electronics) adapted to provide electrical signals to a device under test (50) through at least one connector (45), the at least one connector (45) protruding from at least one open portion (62) between adjacent ribs.

As to claims 15 and 16, Kister discloses, in Fig. 9, a method of testing semiconductor devices (50), comprising: fixedly mounting a force retainer (48) to a material handler (i.e., mounted to external machinery at lip 53); and removably mounting an interface unit (36, 38, 49) to the force retainer (48).

As to claim 17, Kister discloses in Fig. 10, providing the force retainer (48) with inner and outer rings (see Fig. 10) connected with a plurality of ribs (i.e., parts between holes/openings 62).

As to claim 18, Kister discloses in Fig. 9, positioning a test head (Test Electronics) on one side of the handler, providing the test head (Test Electronics) with at least one connector (45); and threading the connector (45) through the force retainer (48).

As to claim 19, Kister discloses in Fig. 9, bringing a device under test (50) into contact with the interface unit (36, 38, 49) thereby creating a probe force; directing the probe force from the interface unit (36, 38, 49) to the force retainer (48); and retaining the probe force using the force retainer (48).

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As to claim 20, Kister discloses in Fig. 9, distributing a probe force on the force retainer (48) using a force locator (49).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kister (U.S.P. 6,064,215).

As to claim 5, Kister discloses all the limitations recited in the claim except the force retainer (48) is made of cast iron; however, Kister, in column 4, lines 34-35, discloses the force retainer (48) can be made of any other heat resistant material which maintains rigidity at elevated temperatures. Therefore, it would have been obvious for

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one of ordinary skill in the art at the time the invention was made to provide cast iron for the force retainer (48) since it is one of a heat resistant material.

Allowable Subject Matter

9. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 13 recites, inter alia, where the interface unit comprises a circuit board stiffener ring mounted on the circuit board and surrounding the force locator.

The art of record does not disclose the above limitations, nor would it be obvious to modify the art of record so as to include the above limitations.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

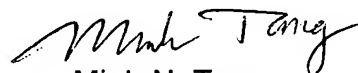
Slocum et al.	5,821,764	Interface Apparatus For Automatic Test Equipment.
Sinsheimer et al.	6,166,553	Prober-Tester Electrical Interface For Semiconductor Test.
Suga	6,292,005	Probe Card For IC Testing Apparatus.
Fredrickson	6,420,885	System And Apparatus For Low-Temperature Semiconductor Device Testing.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh N. Tang whose telephone number is (571) 272-1971. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mrs. Cuneo, Kamand can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Minh N. Tang
Primary Examiner
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8/04/04